Nova Scotia
Department of
Agriculture and Marketing

RP-87-150
Agdex #821.410 03

Investment Limits

1987

INVESTMENT LIMITS FOR
NOVA SCOTIA DAIRY FARMS - 1987

A GUIDE FOR THE USE OF
BORROWED CAPITAL ON NOVA SCOTIA
DAIRY FARMS

PREPARED BY

THE FARM MANAGEMENT DIVISION

EXTENSION SERVICES BRANCH

NOVA SCOTIA DEPARTMENT OF AGRICULTURE AND MARKETING

TRURO, NOVA SCOTIA

INTRODUCTION

Modern dairy farms are very capital intensive. Large amounts of borrowed funds are usually required when a going concern changes owners, or when a new dairy farm is being established. Borrowers and lenders of this capital both have a vested interest in evaluating accurately the capacity of the dairy business to repay principal and interest, as well as compensating the owner for his or her labour and management.

This guide is intended to assist in that process. It should be emphasized that this is just that - a guide, and care should be taken in the interpretation of this information. The user is asked to read carefully all of the assumptions which are used in arriving at the various borrowed capital limits, and to refer to the Nova Scotia Dairy Farm Business Summary, 1986, as well as the five-year summary (1982-86) of the Nova Scotia Dairy Farm Business Summary.

Where historical data for an individual farm is available, every effort should be made to come up with projections for that particular farm, rather than depending solely on this guide.

This guide makes no allowance for check-offs levied against members of cooperative dairies. It should be kept in mind, however, that this check-off will reduce the amount of cash available for servicing debt.

Feedback on the use and design of this publication is always welcome.

Gabriel V. Comeau, P.Ag.
Supervisor, Farm Management

BORROWED CAPITAL LIMITS

- DAIRY -

ASSUMPTIONS:

[1] **Gross Receipts** - Gross Receipts are composed of milk sales and milk subsidies. In addition, livestock sales, crop sales, and one-third of the miscellaneous sales (total for the three of $330. per cow) are added.

[2] **Expenses** - Expenses to produce milk were estimated to be 75 percent of Gross Receipts. Expenses included all direct operating costs plus repairs, taxes, and insurance. It should be noted that the Nova Scotia Dairy Farm Business Summaries for the years 1982-86 inclusive were used as a basis for the above calculations.

[3] **Labor** - Operator Labor was estimated to be $300. per cow. This amount represents unpaid operator labor and must be considered a very minimum living allowance.

[4] **Formula** - The following formula was then used to calculate a Residual for Interest and Principal Repayment.

GROSS RECEIPTS - EXPENSES - LABOR = RESIDUAL FOR

INTEREST AND LOAN REPAYMENT

[5] **Repayment - Capitalization Rate** - Although the name assigned may be somewhat out of context from what is generally understood to be Capitalization Rate, what is visualized is to calculate the Repayment Capacity given various residuals and loan combinations.

To calculate the various Repayment - Capitalization Rates, the following additional assumptions were made:

(a) Farm Loan Board - It was assumed that long term financing would be available from this service using a loan amortized over 20 years with an annual interest rate of 9 percent.

(b) Bank and Other - It was assumed that short and intermediate term financing would be available. It was further assumed that a blend or composite repayment term of four (4) years with an annual interest rate of 12.0 percent (Amortized Loan) would be appropriate.

(c) Equity - Equity was not considered since the main thrust of this booklet was to estimate repayment of interest and principal monies borrowed from businesses external to the farm business as opposed to total capitalization.

(d) Table 1 - This table represents the Repayment - Capitalization Rate for various loan combinations.

[6] DIRECTIONS FOR USE - In order to make use of the information contained in the following tables, several steps are involved. These include:

(a) Determine the Total Capital to be borrowed by the farm business.

(b) Determine the number of cows.

(c) Determine the ratio or percentage of these borrowed funds from, (i) Farm Loan Board, and (ii) Bank and other.

(d) Using this ratio, refer to Table 1 and determine the Repayment - Capitalization Rate.

(e) Using the rate obtained from Table 1, select the appropriate Production Level Table; find the correct blend price to be received for milk; and determine the amount of capital that can be repaid by the farm business.

[7] EXAMPLE CALCULATION - A prospective farm family wishes to know if they can borrow $250,000. to purchase a 60 cow dairy farm. They wish to borrow $237,500. from the Farm Loan Board, and the balance $12,500. from the Bank. They estimate that the herd will produce 6,000 litres of milk per cow per year, and that the blend price for milk will be $48.00 per hectolitre.

(a) Borrowings per Cow = $\frac{\$25,000.}{60} = \$4,166.$

(b) Percentage of Borrowed Funds from:

(i) Farm Loan Board - 95%
(ii) Bank - 5%

(c) Table 1 - Repayment-Capitalization Rate = 12.0

(d) Borrowed Capital Limit from the 6,000 Litre Production Level Table at a blend milk price of $48. per hectolitre is $4,187.

(e) Based on 60 cows, the prospective farm family could meet their debt obligations on their proposed purchase (assuming cost, returns and borrowed patterns as suggested).

[8] **EDITORS NOTE** - The information contained in this booklet is intended for use only as a guide. The information was not developed from random sample data - hence, interpretation and use beyond that as a guide to budgeting is beyond the intent or scope of this paper.

TABLE 1
REPAYMENT - CAPITALIZATION RATE

% BORROWED FROM		REPAYMENT CAP.RATE	% BORROWED FROM		REPAYMENT CAP.RATE
FARM LOAN	BANK		FARM LOAN	BANK	
100	0	10.9	45	55	23.0
95	5	12.0	40	60	24.1
90	10	13.1	35	65	25.2
85	15	14.2	30	70	26.3
80	20	15.3	25	75	27.4
75	25	16.4	20	80	28.5
70	30	17.5	15	85	29.6
65	35	18.6	10	90	30.7
60	40	19.7	5	95	31.8
55	45	20.8	0	100	32.9
50	50	21.9			

4500 LITRE PRODUCTION LEVEL

REPAY-CAP RATE	PRICE/HL $47.00	$48.00	$49.00	$50.00	$51.00	$52.00	$53.00	$54.00	$55.00	$56.00	$57.00
10.9 %	2856	2959	3062	3165	3269	3372	3475	3578	3681	3785	3888
12.0 %	2594	2687	2781	2875	2969	3062	3156	3250	3344	3437	3531
13.1 %	2376	2462	2547	2633	2719	2805	2891	2977	3063	3149	3234
14.2 %	2192	2271	2350	2429	2508	2588	2667	2746	2825	2904	2984
15.3 %	2034	2107	2181	2254	2328	2401	2475	2548	2622	2695	2769
16.4 %	1897	1966	2035	2103	2172	2240	2309	2377	2446	2515	2583
17.5 %	1778	1842	1907	1971	2035	2099	2164	2228	2292	2356	2421
18.6 %	1673	1733	1794	1854	1915	1975	2036	2096	2157	2217	2277
19.7 %	1579	1636	1694	1751	1808	1865	1922	1979	2036	2093	2150
20.8 %	1496	1550	1604	1658	1712	1766	1820	1874	1928	1982	2036
21.9 %	1421	1472	1523	1575	1626	1677	1729	1780	1831	1883	1934
23.0 %	1353	1402	1450	1499	1548	1597	1646	1695	1744	1793	1842
24.1 %	1291	1338	1384	1431	1478	1524	1571	1618	1664	1711	1757
25.2 %	1235	1279	1324	1368	1413	1458	1502	1547	1592	1636	1681
26.3 %	1183	1226	1268	1311	1354	1397	1439	1482	1525	1568	1610
27.4 %	1135	1176	1217	1258	1300	1341	1382	1423	1464	1505	1546
28.5 %	1092	1131	1170	1210	1249	1289	1328	1368	1407	1447	1486
29.6 %	1051	1089	1127	1165	1203	1241	1279	1317	1355	1393	1431
30.7 %	1013	1050	1087	1123	1160	1196	1233	1270	1306	1343	1380
31.8 %	978	1014	1049	1084	1120	1155	1190	1226	1261	1296	1332
32.9 %	946	980	1014	1048	1082	1116	1151	1185	1219	1253	1287

5000 LITRE PRODUCTION LEVEL

REPAY-CAP RATE	PRICE/HL $47.00	$48.00	$49.00	$50.00	$51.00	$52.00	$53.00	$54.00	$55.00	$56.00	$57.00
10.9 %	3395	3509	3624	3739	3853	3968	4083	4197	4312	4427	4541
12.0 %	3083	3187	3292	3396	3500	3604	3708	3812	3916	4021	4125
13.1 %	2824	2920	3015	3110	3206	3301	3397	3492	3587	3683	3778
14.2 %	2605	2693	2781	2869	2957	3045	3133	3221	3309	3397	3485
15.3 %	2418	2499	2581	2663	2744	2826	2908	2990	3071	3153	3235
16.4 %	2256	2332	2408	2484	2560	2636	2713	2789	2865	2941	3017
17.5 %	2114	2185	2256	2328	2399	2471	2542	2613	2685	2756	2828
18.6 %	1989	2056	2123	2190	2257	2324	2392	2459	2526	2593	2660
19.7 %	1877	1941	2004	2068	2131	2195	2258	2321	2385	2448	2512
20.8 %	1778	1838	1898	1958	2018	2079	2139	2199	2259	2319	2379
21.9 %	1689	1746	1803	1860	1917	1974	2031	2088	2145	2202	2259
23.0 %	1608	1662	1717	1771	1825	1880	1934	1988	2043	2097	2151
24.1 %	1535	1586	1638	1690	1742	1794	1846	1897	1949	2001	2053
25.2 %	1468	1517	1567	1616	1666	1715	1765	1815	1864	1914	1963
26.3 %	1406	1454	1501	1549	1596	1644	1691	1739	1786	1834	1881
27.4 %	1350	1395	1441	1486	1532	1578	1623	1669	1714	1760	1806
28.5 %	1298	1341	1385	1429	1473	1517	1561	1604	1648	1692	1736
29.6 %	1249	1292	1334	1376	1418	1460	1503	1545	1587	1629	1671
30.7 %	1205	1245	1286	1327	1367	1408	1449	1489	1530	1571	1611
31.8 %	1163	1202	1241	1281	1320	1359	1399	1438	1477	1516	1556
32.9 %	1124	1162	1200	1238	1276	1314	1352	1390	1428	1466	1504

5500 LITRE PRODUCTION LEVEL

REPAY-CAP RATE	PRICE/HL										
	$47.00	$48.00	$49.00	$50.00	$51.00	$52.00	$53.00	$54.00	$55.00	$56.00	$57.00
10.9 %	3934	4060	4186	4312	4438	4564	4691	4817	4943	5069	5195
12.0 %	3573	3687	3802	3916	4031	4146	4260	4375	4489	4604	4718
13.1 %	3273	3377	3482	3587	3692	3797	3902	4007	4112	4217	4322
14.2 %	3019	3116	3212	3309	3406	3503	3600	3697	3793	3890	3987
15.3 %	2802	2892	2981	3071	3161	3251	3341	3431	3520	3610	3700
16.4 %	2614	2697	2781	2865	2949	3033	3117	3200	3284	3368	3452
17.5 %	2449	2528	2606	2685	2763	2842	2921	2999	3078	3156	3235
18.6 %	2304	2378	2452	2526	2600	2674	2748	2822	2896	2969	3043
19.7 %	2176	2245	2315	2385	2455	2524	2594	2664	2734	2804	2873
20.8 %	2060	2127	2193	2259	2325	2391	2457	2523	2589	2655	2721
21.9 %	1957	2020	2082	2145	2208	2271	2333	2396	2459	2522	2585
23.0 %	1863	1923	1983	2043	2102	2162	2222	2282	2341	2401	2461
24.1 %	1778	1835	1892	1949	2006	2063	2120	2177	2234	2291	2348
25.2 %	1701	1755	1810	1864	1919	1973	2028	2082	2137	2191	2246
26.3 %	1629	1682	1734	1786	1838	1891	1943	1995	2047	2100	2152
27.4 %	1564	1614	1664	1714	1765	1815	1865	1915	1965	2015	2066
28.5 %	1504	1552	1600	1648	1696	1745	1793	1841	1889	1938	1986
29.6 %	1448	1494	1541	1587	1633	1680	1726	1773	1819	1866	1912
30.7 %	1396	1441	1485	1530	1575	1620	1664	1709	1754	1799	1843
31.8 %	1348	1391	1434	1477	1520	1564	1607	1650	1693	1736	1780
32.9 %	1302	1344	1386	1428	1470	1511	1553	1595	1637	1678	1720

6000 LITRE PRODUCTION LEVEL

REPAY-CAP RATE	PRICE/HL										
	$47.00	$48.00	$49.00	$50.00	$51.00	$52.00	$53.00	$54.00	$55.00	$56.00	$57.00
10.9 %	4473	4610	4748	4885	5023	5161	5298	5436	5574	5711	5849
12.0 %	4062	4187	4312	4437	4562	4687	4812	4937	5062	5187	5312
13.1 %	3721	3835	3950	4064	4179	4293	4408	4522	4637	4751	4866
14.2 %	3432	3538	3644	3749	3855	3961	4066	4172	4277	4383	4489
15.3 %	3186	3284	3382	3480	3578	3676	3774	3872	3970	4068	4166
16.4 %	2972	3063	3155	3246	3337	3429	3520	3612	3703	3795	3886
17.5 %	2785	2871	2956	3042	3128	3213	3299	3385	3470	3556	3642
18.6 %	2620	2701	2781	2862	2943	3023	3104	3184	3265	3346	3426
19.7 %	2474	2550	2626	2702	2778	2854	2930	3006	3083	3159	3235
20.8 %	2343	2415	2487	2559	2631	2703	2775	2847	2919	2992	3064
21.9 %	2225	2294	2362	2430	2499	2567	2636	2704	2773	2841	2910
23.0 %	2119	2184	2249	2314	2379	2445	2510	2575	2640	2705	2770
24.1 %	2022	2084	2146	2209	2271	2333	2395	2457	2520	2582	2644
25.2 %	1934	1993	2053	2112	2172	2231	2291	2350	2410	2469	2529
26.3 %	1853	1910	1967	2024	2081	2138	2195	2252	2309	2366	2423
27.4 %	1778	1833	1888	1942	1997	2052	2107	2161	2216	2271	2325
28.5 %	1710	1762	1815	1867	1920	1973	2025	2078	2130	2183	2236
29.6 %	1646	1697	1747	1798	1849	1899	1950	2001	2051	2102	2153
30.7 %	1587	1636	1685	1734	1782	1831	1880	1929	1978	2027	2075
31.8 %	1532	1579	1626	1674	1721	1768	1815	1862	1909	1956	2004
32.9 %	1481	1526	1572	1618	1663	1709	1754	1800	1845	1891	1937

6500 LITRE PRODUCTION LEVEL

REPAY-CAP RATE	PRICE/HL										
	$47.00	$48.00	$49.00	$50.00	$51.00	$52.00	$53.00	$54.00	$55.00	$56.00	$57.00
10.9 %	5012	5161	5310	5459	5608	5757	5906	6055	6204	6353	6502
12.0 %	4552	4687	4823	4958	5093	5229	5364	5500	5635	5770	5906
13.1 %	4169	4293	4417	4541	4665	4789	4913	5038	5162	5286	5410
14.2 %	3846	3961	4075	4189	4304	4418	4533	4647	4761	4876	4990
15.3 %	3569	3676	3782	3888	3994	4100	4207	4313	4419	4525	4631
16.4 %	3330	3429	3528	3627	3726	3825	3924	4023	4122	4221	4320
17.5 %	3120	3213	3306	3399	3492	3585	3677	3770	3863	3956	4049
18.6 %	2936	3023	3110	3198	3285	3372	3460	3547	3634	3722	3809
19.7 %	2772	2854	2937	3019	3102	3184	3267	3349	3431	3514	3596
20.8 %	2625	2703	2781	2859	2938	3016	3094	3172	3250	3328	3406
21.9 %	2493	2567	2642	2716	2790	2864	2938	3012	3087	3161	3235
23.0 %	2374	2445	2515	2586	2656	2727	2798	2868	2939	3010	3080
24.1 %	2266	2333	2400	2468	2535	2603	2670	2737	2805	2872	2939
25.2 %	2167	2231	2296	2360	2424	2489	2553	2618	2682	2747	2811
26.3 %	2076	2138	2199	2261	2323	2385	2446	2508	2570	2632	2693
27.4 %	1993	2052	2111	2170	2230	2289	2348	2408	2467	2526	2585
28.5 %	1916	1973	2030	2087	2144	2201	2258	2315	2372	2429	2486
29.6 %	1844	1899	1954	2009	2064	2119	2174	2229	2283	2338	2393
30.7 %	1778	1831	1884	1937	1990	2043	2096	2149	2202	2254	2307
31.8 %	1717	1768	1819	1870	1921	1972	2023	2074	2125	2176	2227
32.9 %	1659	1709	1758	1807	1857	1906	1956	2005	2054	2104	2153

7000 LITRE PRODUCTION LEVEL

REPAY-CAP RATE	PRICE/HL $47.00	$48.00	$49.00	$50.00	$51.00	$52.00	$53.00	$54.00	$55.00	$56.00	$57.00
10.9 %	5551	5711	5872	6032	6193	6353	6514	6674	6835	6996	7156
12.0 %	5041	5187	5333	5479	5625	5770	5916	6062	6208	6354	6500
13.1 %	4618	4751	4885	5018	5152	5286	5419	5553	5686	5820	5953
14.2 %	4260	4383	4506	4629	4753	4876	4999	5122	5245	5369	5492
15.3 %	3953	4068	4182	4296	4411	4525	4639	4754	4868	4982	5097
16.4 %	3688	3795	3901	4008	4115	4221	4328	4435	4541	4648	4755
17.5 %	3456	3556	3656	3756	3856	3956	4056	4156	4256	4356	4456
18.6 %	3252	3346	3440	3534	3628	3722	3816	3910	4004	4098	4192
19.7 %	3070	3159	3247	3336	3425	3514	3603	3691	3780	3869	3958
20.8 %	2907	2992	3076	3160	3244	3328	3412	3496	3580	3664	3748
21.9 %	2761	2841	2921	3001	3081	3161	3241	3320	3400	3480	3560
23.0 %	2629	2705	2781	2857	2933	3010	3086	3162	3238	3314	3390
24.1 %	2509	2582	2654	2727	2800	2872	2945	3017	3090	3162	3235
25.2 %	2400	2469	2538	2608	2677	2747	2816	2885	2955	3024	3094
26.3 %	2299	2366	2432	2499	2565	2632	2698	2765	2831	2898	2964
27.4 %	2207	2271	2335	2398	2462	2526	2590	2654	2718	2781	2845
28.5 %	2122	2183	2244	2306	2367	2429	2490	2551	2613	2674	2735
29.6 %	2043	2102	2161	2220	2279	2338	2397	2456	2516	2575	2634
30.7 %	1970	2027	2084	2140	2197	2254	2311	2368	2425	2482	2539
31.8 %	1901	1956	2011	2066	2121	2176	2231	2286	2341	2396	2451
32.9 %	1838	1891	1944	1997	2050	2104	2157	2210	2263	2316	2369

7500 LITRE PRODUCTION LEVEL

REPAY-CAP RATE	PRICE/HL										
	$47.00	$48.00	$49.00	$50.00	$51.00	$52.00	$53.00	$54.00	$55.00	$56.00	$57.00
10.9 %	6090	6262	6434	6606	6778	6950	7122	7294	7466	7638	7810
12.0 %	5531	5687	5843	6000	6156	6312	6468	6625	6781	6937	7093
13.1 %	5066	5209	5352	5495	5639	5782	5925	6068	6211	6354	6497
14.2 %	4673	4805	4937	5069	5201	5333	5466	5598	5730	5862	5994
15.3 %	4337	4460	4582	4705	4827	4950	5072	5195	5317	5440	5562
16.4 %	4046	4160	4275	4389	4503	4618	4732	4846	4960	5075	5189
17.5 %	3792	3899	4006	4113	4220	4327	4434	4541	4649	4756	4863
18.6 %	3567	3668	3769	3870	3970	4071	4172	4273	4373	4474	4575
19.7 %	3368	3463	3558	3653	3749	3844	3939	4034	4129	4224	4319
20.8 %	3190	3280	3370	3460	3550	3640	3730	3821	3911	4001	4091
21.9 %	3030	3115	3201	3286	3372	3457	3543	3629	3714	3800	3885
23.0 %	2885	2966	3048	3129	3210	3292	3373	3455	3536	3618	3699
24.1 %	2753	2831	2908	2986	3064	3142	3219	3297	3375	3453	3530
25.2 %	2633	2707	2781	2856	2930	3004	3079	3153	3228	3302	3376
26.3 %	2522	2594	2665	2736	2808	2879	2950	3021	3093	3164	3235
27.4 %	2421	2490	2558	2626	2695	2763	2832	2900	2968	3037	3105
28.5 %	2328	2393	2459	2525	2591	2656	2722	2788	2854	2919	2985
29.6 %	2241	2304	2368	2431	2494	2558	2621	2684	2748	2811	2874
30.7 %	2161	2222	2283	2344	2405	2466	2527	2588	2649	2710	2771
31.8 %	2086	2145	2204	2263	2322	2381	2440	2499	2557	2616	2675
32.9 %	2016	2073	2130	2187	2244	2301	2358	2415	2472	2529	2586

8000 LITRE PRODUCTION LEVEL

REPAY-CAP RATE	PRICE/HL										
	$47.00	$48.00	$49.00	$50.00	$51.00	$52.00	$53.00	$54.00	$55.00	$56.00	$57.00
10.9 %	6629	6812	6996	7179	7363	7546	7730	7913	8096	8280	8463
12.0 %	6020	6187	6354	6520	6687	6854	7020	7187	7354	7520	7687
13.1 %	5515	5667	5820	5972	6125	6278	6430	6583	6736	6888	7041
14.2 %	5087	5228	5369	5510	5650	5791	5932	6073	6214	6354	6495
15.3 %	4721	4852	4982	5113	5244	5375	5505	5636	5767	5897	6028
16.4 %	4404	4526	4648	4770	4892	5014	5136	5258	5380	5501	5623
17.5 %	4127	4241	4356	4470	4584	4698	4813	4927	5041	5155	5270
18.6 %	3883	3991	4098	4205	4313	4420	4528	4635	4743	4850	4958
19.7 %	3666	3768	3869	3971	4072	4174	4275	4376	4478	4579	4681
20.8 %	3472	3568	3664	3760	3857	3953	4049	4145	4241	4337	4433
21.9 %	3298	3389	3480	3572	3663	3754	3845	3937	4028	4119	4210
23.0 %	3140	3227	3314	3401	3488	3574	3661	3748	3835	3922	4009
24.1 %	2997	3079	3162	3245	3328	3411	3494	3577	3660	3743	3826
25.2 %	2866	2945	3024	3104	3183	3262	3342	3421	3500	3580	3659
26.3 %	2746	2822	2898	2974	3050	3126	3202	3278	3354	3430	3506
27.4 %	2635	2708	2781	2854	2927	3000	3073	3146	3219	3292	3365
28.5 %	2534	2604	2674	2744	2814	2884	2955	3025	3095	3165	3235
29.6 %	2440	2507	2575	2642	2710	2777	2845	2912	2980	3047	3115
30.7 %	2352	2417	2482	2547	2613	2678	2743	2808	2873	2938	3003
31.8 %	2271	2334	2396	2459	2522	2585	2648	2711	2774	2836	2899
32.9 %	2195	2256	2316	2377	2438	2499	2559	2620	2681	2742	2802